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Applicant Feng Chen  
Amendment filed with the RCE

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### Remarks/Arguments

Examiner Shakeri is thanked for the thorough Office Actions and advisory action.

### In the Claims

Claims 1 to 36 are canceled.

### **New claims 37 to 61 are added.**

Parent claim 37 contains the subject matter of originally filed parent claim 1 with additional limitations. No new matter is added.

Support for the limitation "said plurality of grooves are spaced apart;" is shown in figures 2A and 3A.

Claim 38 is added. Support for claim 38 is shown in figures 3A-3F, and 4A-4C.

Claim 39 is added. For support, see comments for claim 38 above.

Claim 40 is added. For support, see comments for claim 38 above. The limitation "said lower surface does not comprise an annular recess. " is supported in figure 3A and 4A. This is a negative limitation that excludes US 6893327-kajiwara's annular recess 215 - abstract; see figure 8.

Claims 41 and 42, are added. For support see original claim 2.

Claim 43 is added. For support see original claim 3.

Claim 44 is added. For support see original claim 4.

Claim 45 is added. For support see amended claims 1 and 5 from response after final filed 04 Jan 2006.

Claim 46 is added. For support see original claim 6.

Claim 47 is added. For support see original claim 7.

Claim 48 is added. For support see amended claims 1 and 10 from response after final filed 04 Jan 2006.

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Claim 49 is added. For support see original claim 11.

Claim 50 is added. For support see amended claims 1 and 12 from response after final filed 04 Jan 2006.

New parent claim 50 is added. For support see comments above for parent claim 37. For support of the limitation "said plurality of grooves are spaced apart; said plurality of grooves do not intersect;" "said plurality of grooves only communicate between said inner peripheral surface and said outer peripheral surface." See figures 3A and 4A. No new matter is added.

New claim 51 is added. For support see comments above for claim 40.

New claim 52 is added. For support see claim 41.

New claim 53 is added. For support see claim 43.

New claim 54 is added. For support see claims 40 and 41.

New parent claim 55 is added. For support see originally filed claim 14 and new claim 50. Support for the limitation "said plurality of grooves are spaced apart; said plurality of grooves only communicate between said inner peripheral surface and said outer peripheral surface; " is shown in figures 3A and 4A. No new matter is added.

New claim 56 is added. For support see originally filed claim 15.

New claim 57 is added. For support see originally filed claim 16.

New claim 58 is added. For support see originally filed claim 17.

New claim 59 is added. For support see new claim 51.

New claim 60 is added. For support see originally filed claim 20.

New claim 61 is added. For support see originally filed claim 21.

Applicant respectfully requests entry of these amendments.

No new matter is added.

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**CLAIM REJECTIONS:**

**Rejection of Claims 1, 5, 9, 12, 13, 14, 15, 19, 22-24, 26, 30-32, 34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiwara et al**

The rejection of Claims 1, 5, 9, 12, 13, 14, 15, 19, 22-24, 26, 30-32, 34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiwara et al is acknowledged. Reconsideration and withdrawal is respectfully requested in view of the amendments to the claims and following remarks.

New claim are added that cause the rejections to be mute.

**All the new added claims 37 to 61 distinguish over Kajiwara and are non-obvious in view of Kajiwara.**

Claim 37 states: (emphasis added)

37. (NEW) A CMP retaining ring, comprising:  
an inner peripheral surface;  
an outer peripheral surface;  
a lower surface adapted to contact and depress an upper surface of a polishing pad during chemical mechanical polishing of a lower surface of a substrate;  
a plurality of grooves on said lower surface of said retaining ring;  
said plurality of grooves extending from said inner peripheral surface to said outer peripheral surface;  
**said plurality of grooves are spaced apart;**  
said plurality of grooves include at least a first groove and a second groove;  
at least a portion of said first groove has a rounded cross sectional contour or slanted cross sectional contour.

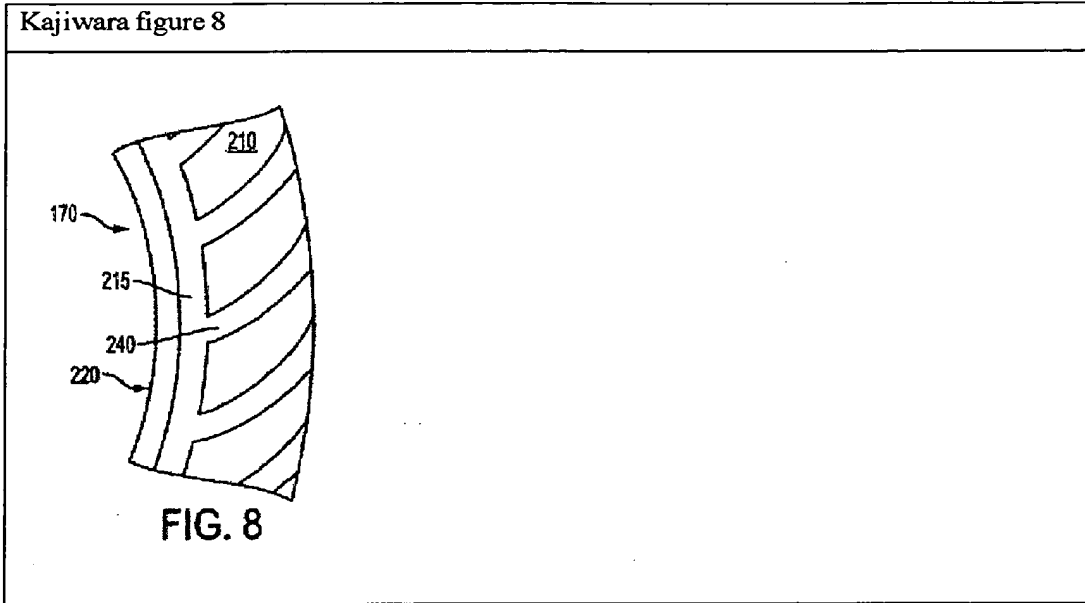
In contrast, Kajiwara does not meet claim 37 limitations and teaches against claim 37 limitations.

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Kajiwara figure 8 teaches intersecting **non-spaced grooves 240** **215**.

This teaches against claim 37.



It is not obvious to motivation to modify Kajiwara to meet applicant's parent claims

It is not obvious to modify Kajiwara to meet applicant's new parent claims because there is no motivation. Nothing in Kajiwara suggest applicant's only spaced grooves (no non-spaced and intersecting Kajiwara concentric groove 215).

Kajiwara solves a different problem than applicant's invention. The main teaching and key element of Kajiwara is the annular groove 215. See abstract, see Kajiwara claim 1, lines 61 to 64. Furthermore, Kajiwara is complete and does not suggest modification.

Kajiware teaches against applicant's new claim limitations.

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Claims 38, 39 and 40 distinguish over and are non-obvious over Kajiwara

Claim 38–40 state:

38. (NEW) The CMP retaining ring of claim 37 wherein said lower surface of said retaining ring is essentially flat with only said plurality of grooves therein.

39. (NEW) The CMP retaining ring of claim 37 wherein said plurality of grooves do not intersect;  
said plurality of grooves only communicate between said inner peripheral surface and said outer peripheral surface.

40. (NEW) The CMP retaining ring of claim 37 wherein said plurality of grooves are linear; and  
said plurality of grooves are uninterrupted extending from said inner peripheral surface to said outer peripheral surface;  
said lower surface does not comprise an annular recess.

In contrast, Kajiwara et al. figure 8 and associated text teach away from applicant's claims 38 to 40 by teaching Kajiwara annular groove 215 that communicated with radial grooves 240. See Kajiwara figure 8.

New parent claims 50 and 55 teach additional no-obvious limitations and are therefore non-obvious over the cited references.

For these reasons, all new claims are non-obvious over the cited references.

Rejection of Claims 1, 5, 9, 12, 13, 14, 15, 19, 22-24, 26, 30-32, 34 and 36 under 35 U.S.C. 103(a) as being unpatentable over Kajiwara et al. in view of Chen et al. (6,656,019).

The rejection of claims 1, 5, 9, 12, 13, 14, 15, 19, 22-24, 26, 30-32, 34 and 36 under 35 U.S.C. 103(a) as being unpatentable over Kajiwara et al. in view of Chen

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et al. (6,656,019) is acknowledged. Reconsideration and withdrawal of the rejection is respectfully requested in view of the amendments.

New claim are added that cause the rejections to be mute.

As discussed above the new added parent claims are non-obvious.

Therefore the dependent claims are non-obvious. The dependent claims add further non-obvious limitations.

The rejection of Claims 7, 10, 12, 21, 25, 27-29, 33 and 35 under 35 U.S.C. 103(a) as being unpatentable over Prior Art (modified Kajiwara et al. alone and/or in view of Chen et al.) as applied to claims 1 and 14 above, and further in view of Taylor (6,869,335).

The rejection of Claims 7, 10, 12, 21, 25, 27-29, 33 and 35 under 35 U.S.C. 103(a) as being unpatentable over Prior Art (modified Kajiwara et al. alone and/or in view of Chen et al.) as applied to claims 1 and 14 above, and further in view of Taylor (6,869,335) is acknowledged. Reconsideration and withdrawal of the rejection is respectfully requested in view of the amendments.

New claim are added that cause the rejections to be mute.

As discussed above the new added parent claims are non-obvious.

Therefore the dependent claims are non-obvious. The dependent claims add further non-obvious limitations.

#### Address all pending claims

It is believed that all the pending claims have been addressed.

However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim

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does not necessarily signify concession of the unpatentability of the claim prior to its amendment.

**CONCLUSION**

In conclusion, reconsideration and withdrawal of the rejections are respectfully requested. Allowance of all claims is requested. Issuance of the application is requested.

It is requested that the Examiner telephone the undersigned attorney at (215) 670-2455 should there be anyway that we could help to place this Application in condition for Allowance.

**Charge to Deposit Account**

The commissioner is hereby authorized to apply any fees or credits in this case, which are not already covered by check or credit card, to Deposit Account No. 502018 referencing this attorney docket. The Commissioner is also authorized to charge any additional fee under 37 CFR §1.16 and 1.17 to this Deposit Account.

Respectfully submitted,

Date: April 4, 2006

/William J. Stoffel/

William J. Stoffel Reg. No. 39,390  
215-670-2455  
Customer number 30402

Stoffel Law Office  
1735 Market St - Ste A455  
Philadelphia, PA 19103-7502 USA  
Telephone: 215-670-2455  
Fax: 267-200-0730

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